

ABSTRACT OF THE DISCLOSURE

The present invention describes a method for fabricating an x-ray mask tool which can achieve pattern features having lateral dimension of less than 1 micron. The process begins by depositing a conductive metal layer onto one surface of a silicon wafer. A thin photoresist and a standard lithographic mask are then used to transfer an trace image pattern onto the opposite surface of the wafer by exposing and developing the resist. The exposed portion of the silicon substrate is anisotropically etched through the wafer thickness down to conductive metal layer to provide an etched pattern consisting of a series of rectilinear channels and recesses in the silicon which serve as the silicon micro-mold. Microcomponents are prepared with this mold by first filling the mold channels and recesses with a metal deposit, typically by electroplating, and then removing the silicon micro-mold by chemical etching.